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Sommario/riassunto

In many domestic and industrial processes, vast percentages of primary energy are produced by the combustion of fossil fuels. Apart from diminishing the source of fossil fuels and the increasing risk of higher costs and energy security, the impact on the environment is worsening continually. Renewables are becoming very popular, but are, at present, more expensive than fossil fuels, especially photovoltaics and hydropower. Biomass is one of the most established and common sources of fuel known to mankind, and has been in continuous use for domestic heating and cooking over the years, especially in poorer communities. The use of biomass to produce electricity is interesting and is gaining ground. There are several ways to produce electricity from biomass. Steam and gas turbine technology is well established but requires temperatures in excess of 250 °C to work effectively. The organic Rankine cycle (ORC), where low-boiling-point organic solutions can be used to tailor the appropriate solution, is particularly successful for relatively low temperature heat sources, such as waste heat from coal, gas and biomass burners. Other relatively recent technologies have become more visible, such as the Stirling engine and thermo-electric generators are particularly useful for small power production. However, the uptake of renewables in general, and biomass in particular, is still considered somewhat risky due to the lack of best practice examples to demonstrate how efficient the technology is today. Hence, the call for this Special Issue, focusing on country files, so that different nations' experiences can be shared and best practices can be published, is warranted. This is realistic, as it seems that some nations have different attitudes to biomass, perhaps due to resource availability, or the technology needed to utilize biomass. Therefore, I suggest that we go forward with this theme, and encourage scientists and engineers who are researching in this field to present case studies related to different countries. I certainly have one case study for the UK to present.